

A banner featuring a blue background with a central graphic of a fiber optic cable. The cable is shown in cross-section, revealing numerous glowing green and blue fibers. The text 'TxDOT ROW' is in large white letters, and 'UTILITY WEEK' is in smaller white letters inside a white rectangular box.

# TxDOT ROW UTILITY WEEK

*THE POWER OF YOU - Delivering Right-Of-Way Solutions to Texas*

## Utilities in Maintenance

Day 3 – 3:45pm-4:15pm

12/14/2023







Mark Johnson has a bachelor's degree in industrial engineering from Purdue University and a master's degree in mechanical engineering from the University of Michigan. He has been with TxDOT for over 16 years and has worked in a variety of roles from traffic engineering to rail safety and most recently, in maintenance operations and data analytics. Today he is going to present various information regarding utilities from his background in those functional roles. In his free time, he enjoys live music and dancing Argentine tango.



# Mexico City: February 1978 Utility Work



**Coyolxauhqui Stone**

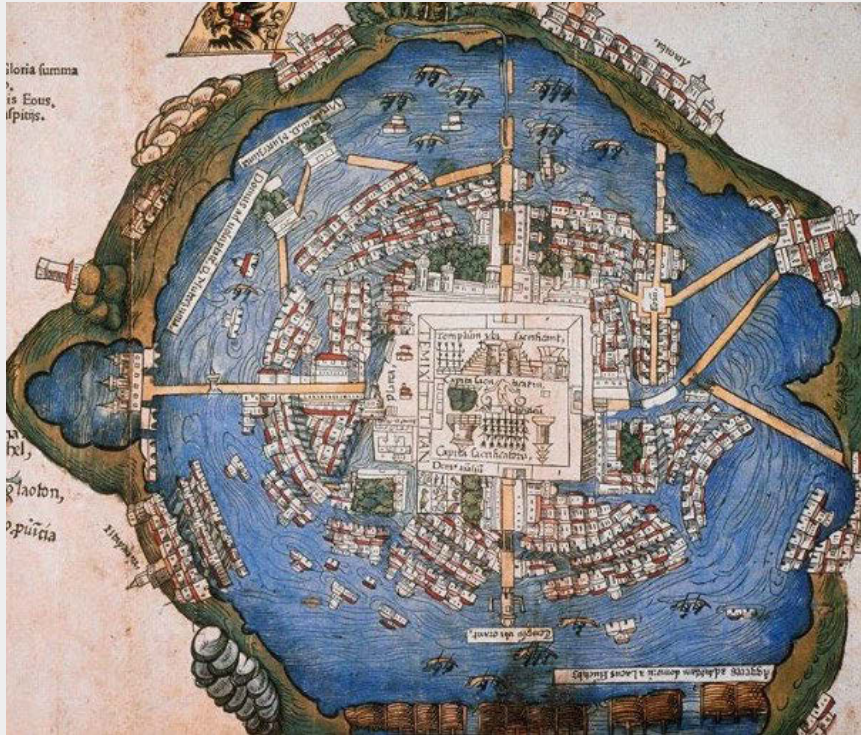


# Tenochtitlan 1519 (Later Renamed Mexico City)





# 500 Years Later...



**Tenochtitlan 1519**



**Mexico City Today**







# Maintenance Division Role in Utilities

## Reviewing High Pressure Gas Lines and Exceptions to Policy:

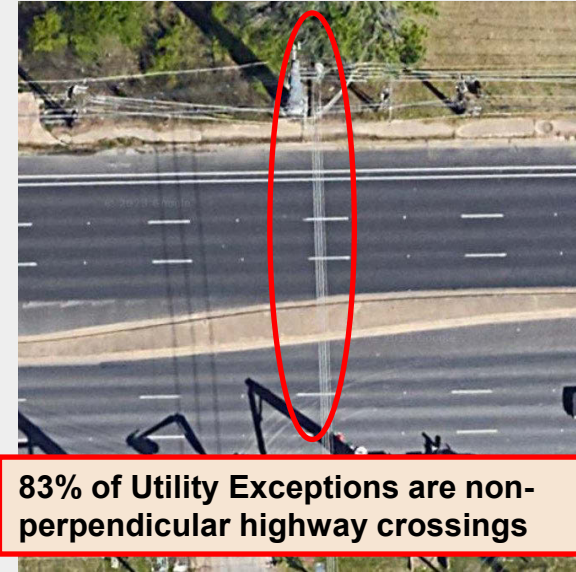
- MNT reviewed 698 high pressure gas lines and 306 exceptions to policy in last 2 years; MNT had plan comments on ~12% of these
- Typical comments: missing cable markers, vents, or cathodic protection



**Poles must be  
36" diameter or  
less**



**Utility poles must be within 3' of ROW**



**83% of Utility Exceptions are non-perpendicular highway crossings**



# Understanding Clear Zone



For a certain edge from the white stripe, there should not be anything that hasn't been crash tested

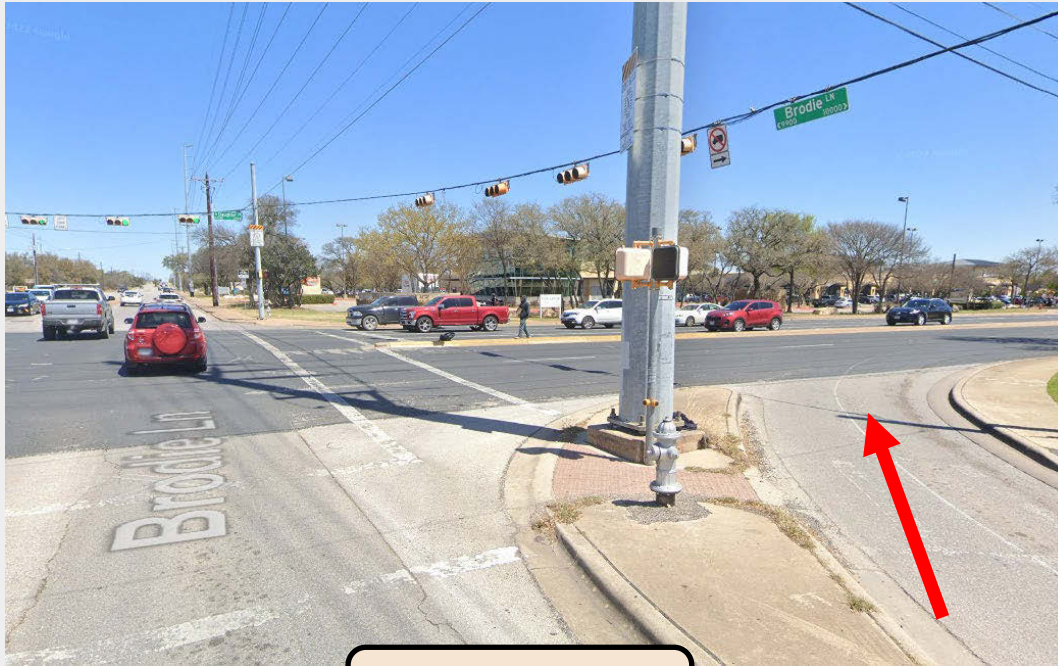
...but a clear zone is theoretical, and we should strive to go beyond the standard!

## Roadway Design Manual:

Location	Functional Classification	Design Speed (mph)	Avg. Daily Traffic <sup>2</sup>	Clear Zone Width (ft) <sup>1,3,4,5</sup>	
				Minimum	Desirable
Rural	Arterial	All	≤ 750	16	30
			≥ 750	30	--



# Sight Distance Issues



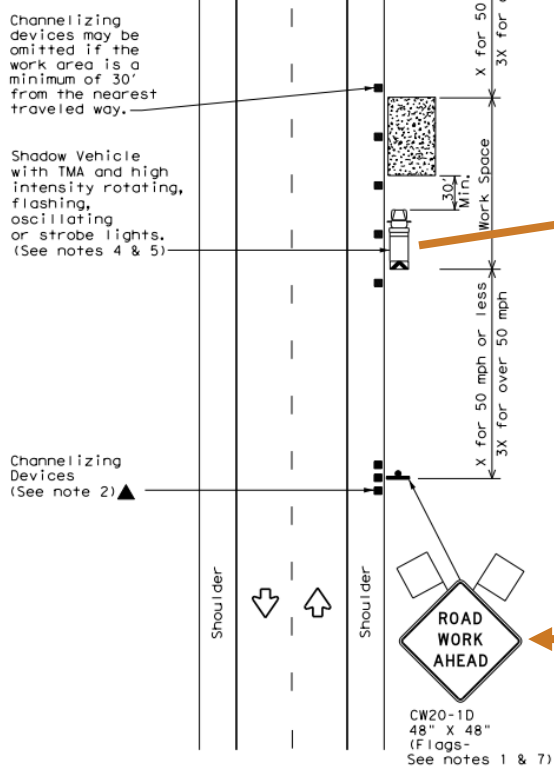
**Transmission Pole  
on an Island!**



**Good Luck Making this  
Right Turn on Red...**



# Traffic Control & Safety Data

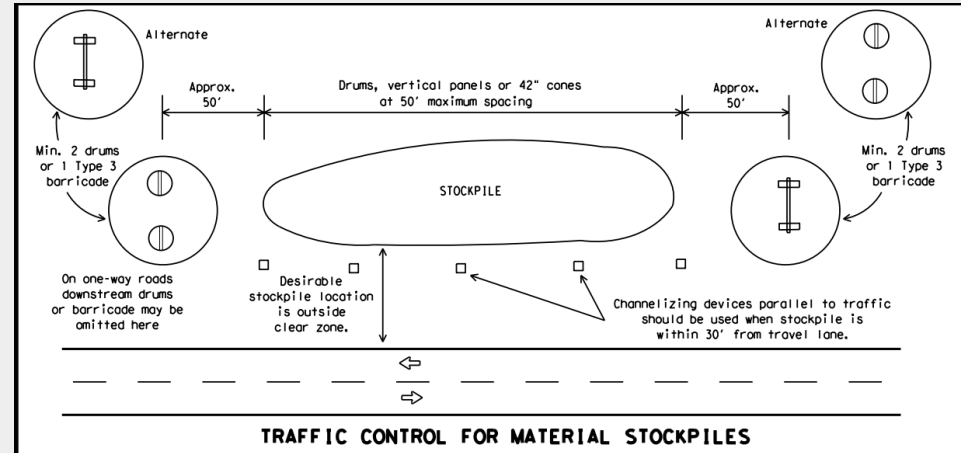


## Traffic Safety Concerns:

- 1/3 of fatal crashes involve driving under the influence
- Texting and driving is another huge causal factor of fatal crashes



**TCP (1-1a): For Short Term Stationary Work**



**BC (10)**



# Pits & Quarries

- Texas Aggregate Quarry and Pit Safety Act (Ch. 133 Texas Natural Resources Code)
  - Require barriers to protect road users
  - Protect landowners from eroding property
  - Pits must be 5' deep and within 200' of a public road

## MNT Quarry/Pit Safety Program Inspector:

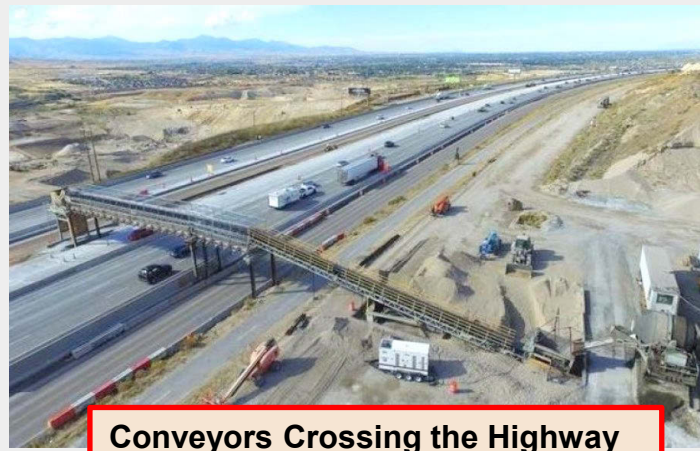
Todd Huddleson

[Todd.Huddleson@txdot.gov](mailto:Todd.Huddleson@txdot.gov)

(737) 465-2173



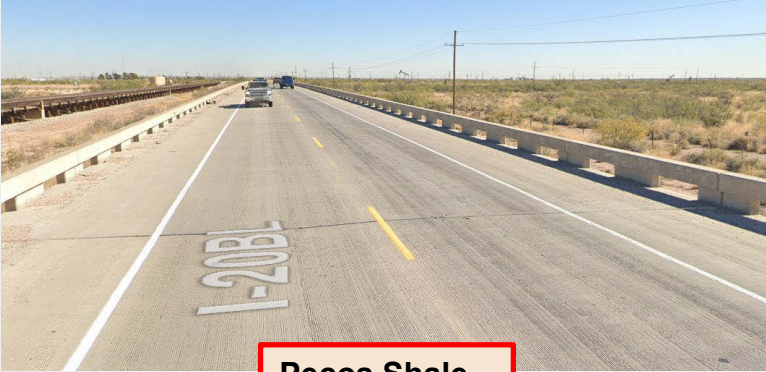




**Conveyors Crossing the Highway**



**Oil Permits**



**Pecos Shale**

Maintenance Division can assist with highway crossing and highway use agreements. We have various diagnostic equipment to test the pavement.







# Bridge Attachment Agreements



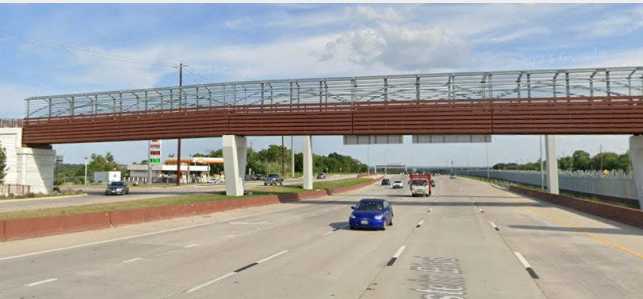
These types of agreements are not utility agreements and are usually handled thru the Bridge Division, unless the devices are not installed at bridges.



**USGS and LCRA Stream Monitoring Devices**



**...but don't confuse these with TxDOT ITS Cabins!**



**What if the city wants to install an entire pedestrian bridge over the highway?!**



**Are these public utilities or TxDOT's own ITS/power conduits?**



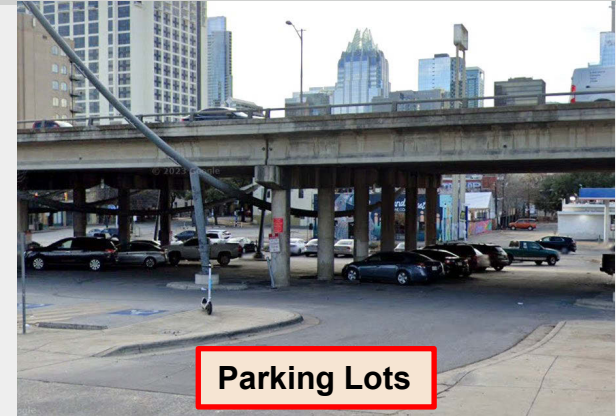
# Multiple Use Agreements



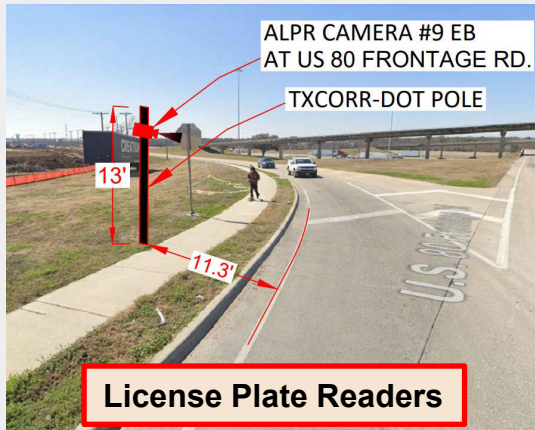
These are agreements with local governments to install and maintain various devices in TxDOT rights of way.



**Bridge Murals**



**Parking Lots**



**License Plate Readers**



**Trails Under Bridges**

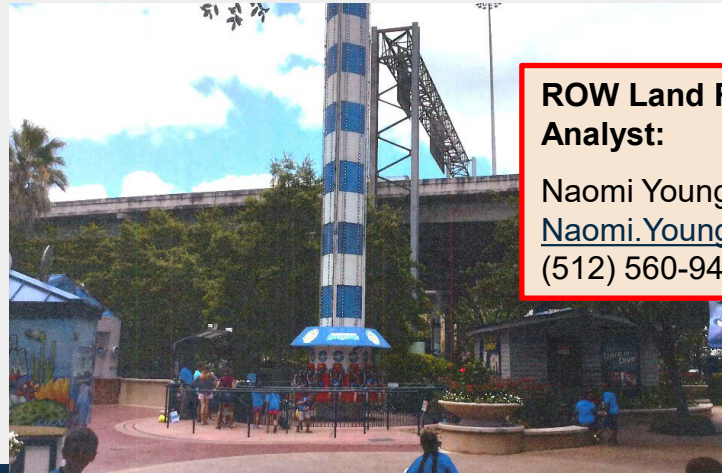


**Gateway Monument Agreements**



# Lease Agreements

- Saltwater:
  - 42 Subsurface Long Term
  - 45 temporary surface leases/month
- Ground:
  - 174 Total
  - 86 are parking (49%)



## ROW Land Real Estate Analyst:

Naomi Young

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(512) 560-9477



# Disaster Coordination

- Plan and coordinate with utilities prior to disaster events
- MNT coordinates with the PUC and RRC
- SB 3: TDEM, along with several state agencies, partners with utilities to ensure a reliable grid during disasters
  - SB 1093: Critical Infrastructure Group
- District utility coordinators: we may need you to identify the owner of a utility

## MNT Emergency Mgmt Coordinator:

Matthew Heinze  
[Matthew.Heinze@txdot.gov](mailto:Matthew.Heinze@txdot.gov)  
(512) 658-1220



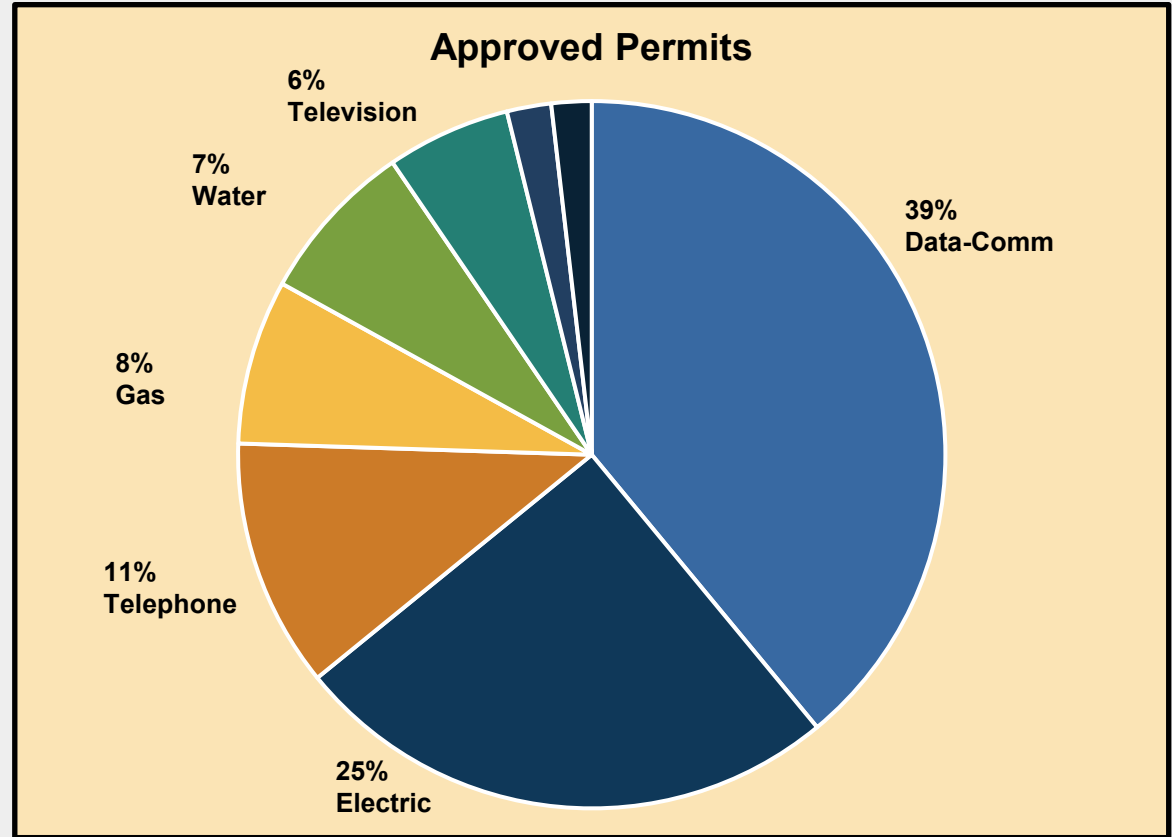
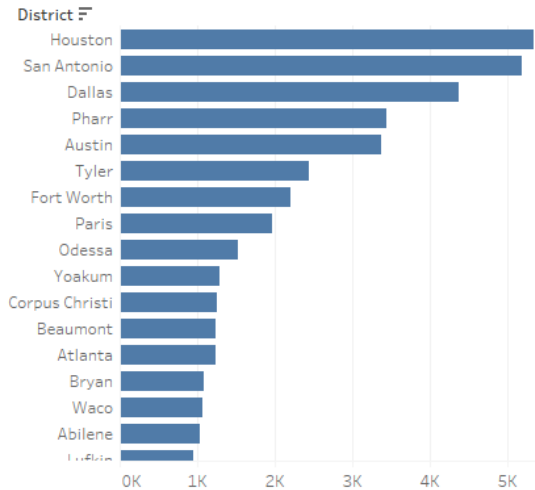


# Statistics on 2022-23 Utility Installations (from old UIR System)



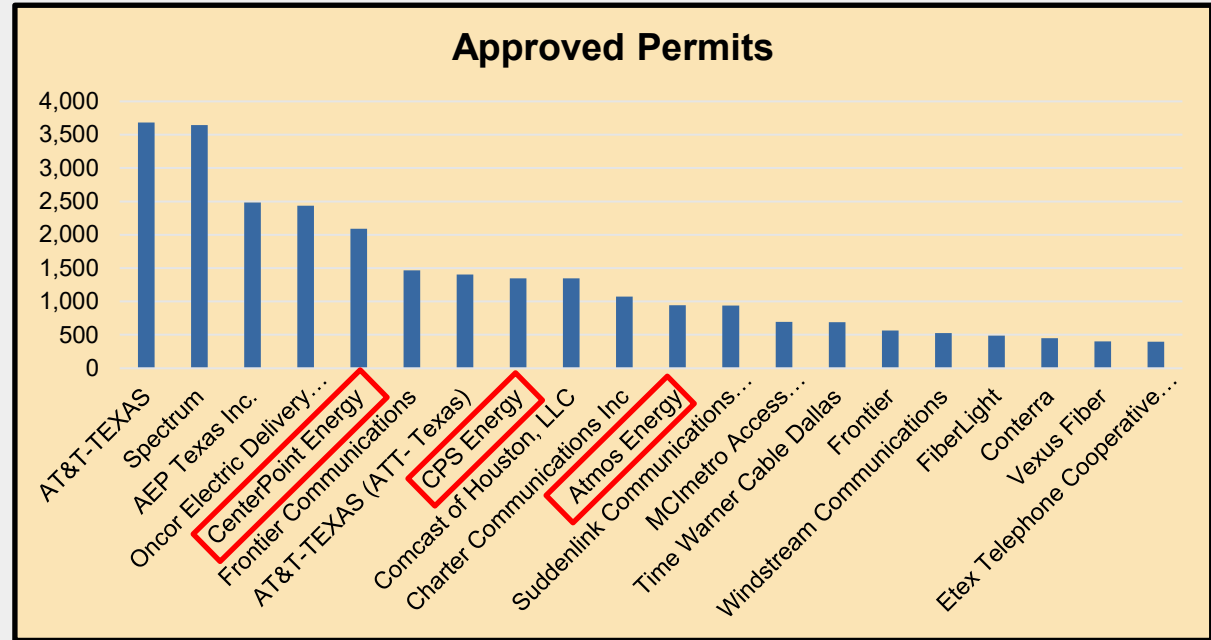
- Over 44,000 Permits Approved
- Avg approval time ~30 days
- Almost 1600 utility owners

Approved Permits by District



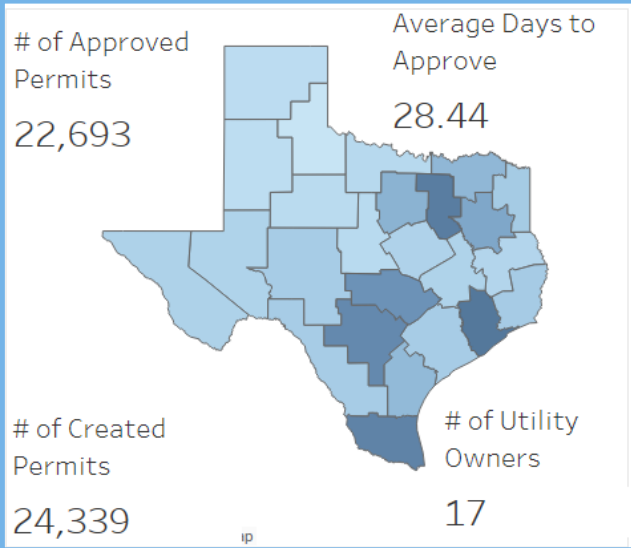


- 20 Owners had at least 400 approved permits (about 61% of permits)
- 17 of these are communications or electric utilities
- CenterPoint Energy, CPS Energy, and Atmos Energy have significant gas permits (in red boxes)

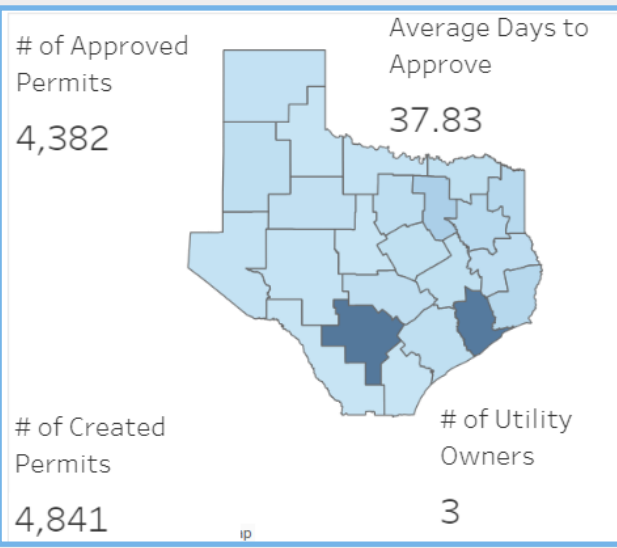




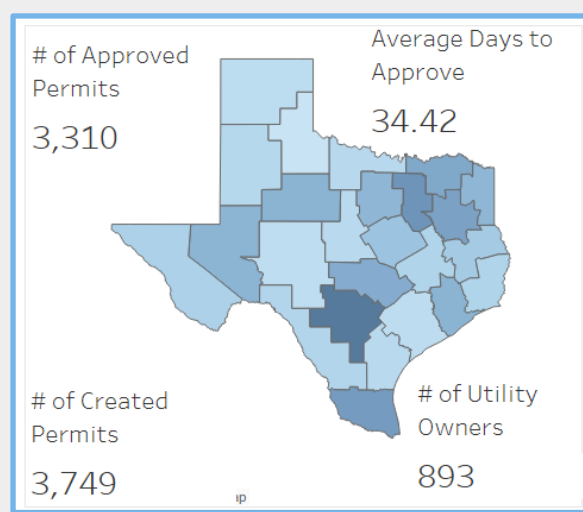
# Heat Maps of Utility Installations



**The top 17 data/electric utility owners**



**Centerpoint, CPS, and Atmos permits**  
-Atmos in west Texas, Centerpoint east Texas  
-CPS Energy in San Antonio  
-includes electric and gas permits



## Water Permits

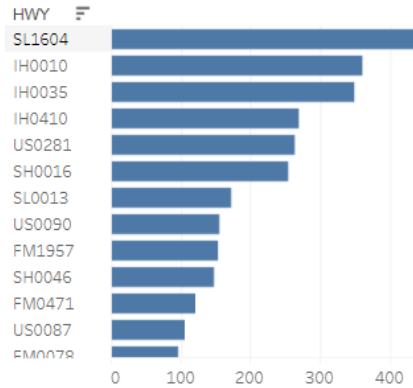
-Not one owner had 200 approved permits



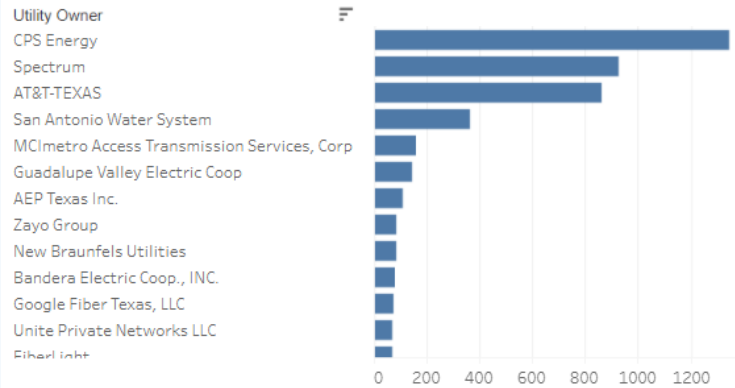
# San Antonio District Utilities FY 22-23



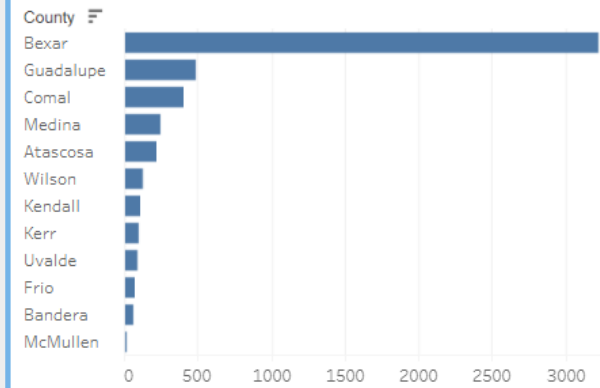
## Approved Permits by HWY



## Approved Permits by Utility Owner



## Approved Permits by County

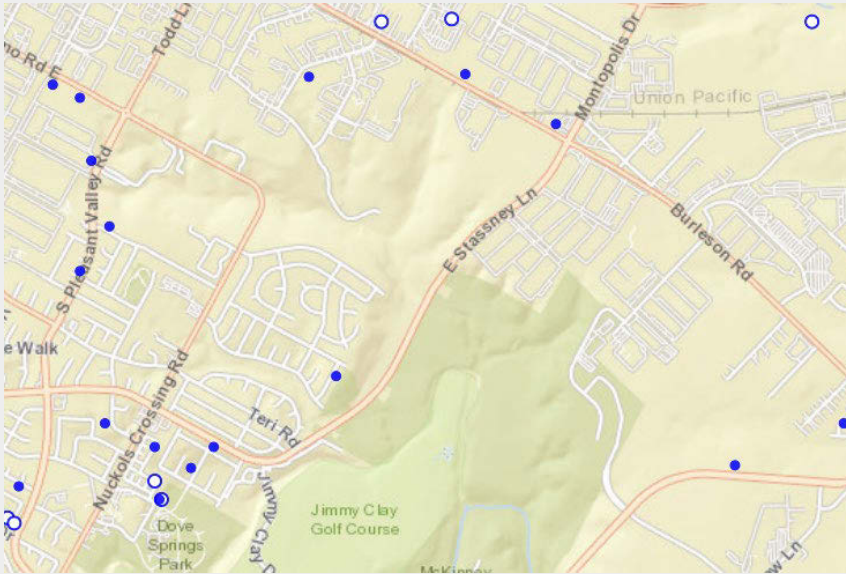


### What does the data tell us?

*Clearly there is a ton of utility work happening around the San Antonio metro area, largely focused on LP 1604 and various interstates. 68% of the permits are from CPS Energy, Spectrum, AT&T Texas, and San Antonio Water System (SAWS).*

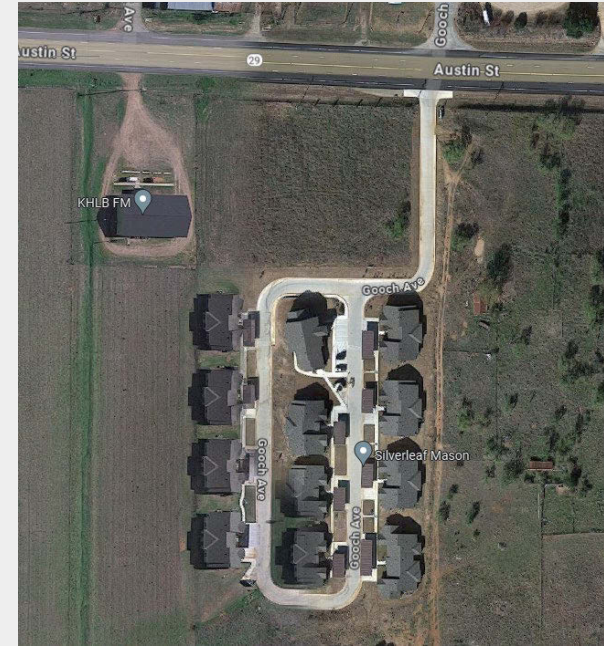


# Tying Permits Together



**City of Austin Open Data Portal:**  
***Construction Permits in Last 30 Days***

**New Housing Development:**  
***We should be seeing utility, driveway, and mailbox permit requests***

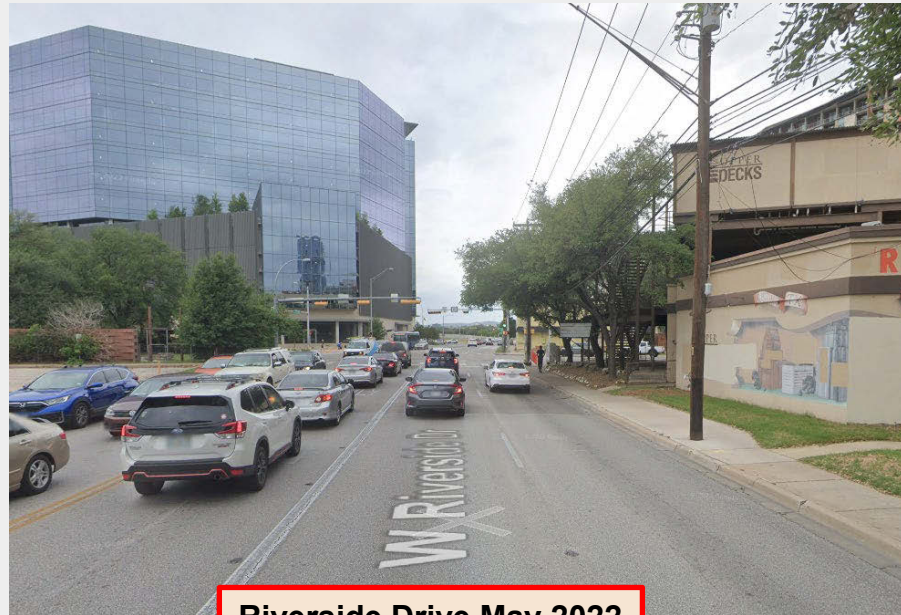




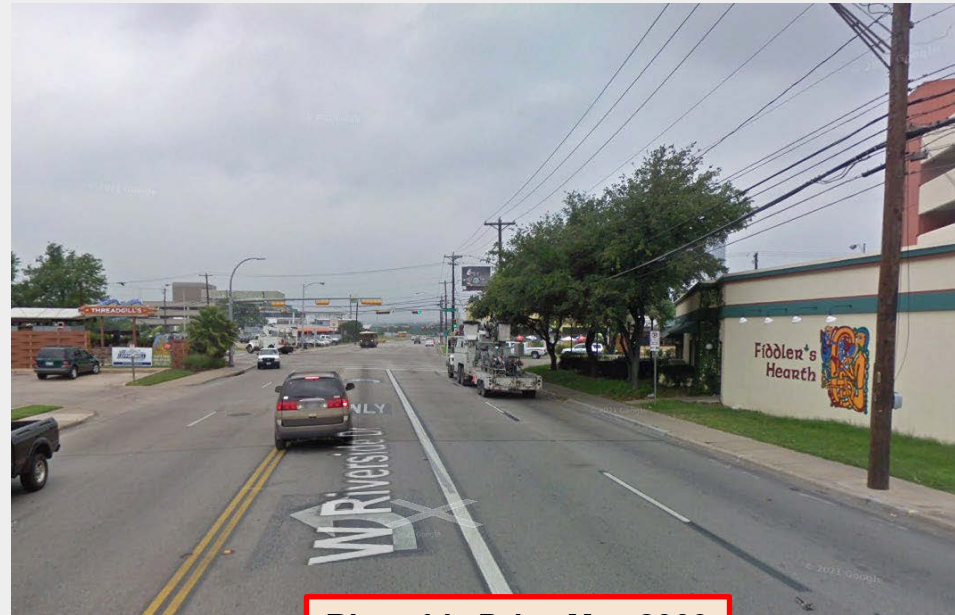
# Economic Development

## Private Sector Development:

*Do we need turn lanes, medians, new signs, traffic signal timing adjustments, curbed sidewalks, etc?*



Riverside Drive May 2022



Riverside Drive May 2009



# Watch for Levitating Power Poles...



**Please contact me!**

Mark Johnson, MNT

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# Questions







*Thank You!*



A graphic of a blue fiber optic cable with light pulses traveling through it, set against a dark blue background with faint lightning bolt patterns.

# TxDOT ROW UTILITY WEEK

*THE POWER OF YOU - Delivering Right-Of-Way Solutions to Texas*

*Thank you for  
attending!*